

Remarks

- 1) Applicant thanks the Examiner for his office action and hopes that this response will further the understanding of applicant's invention.
- 2) Claims 5-17 are pending in the application, and stand rejected under 35 U.S.C. §103(a), as being unpatentable over Kimbrough et al. (US2002/0063924) (Kimbrough hereinafter) in view of Natra (EP1009156). Claims 5-7 and 10-14 and 16 are amended herein.
- 3) Several typographical and grammatical errors were corrected by the present amendment. Applicant thanks the Examiner for pointing out those inadvertent errors.
- 4) The amended independent claims recite the following:

Each subscriber-specific conversion element of an RDSLAM is constructed to:

(a) produce a subscriber-specific electric signal from downstream signals received from a passive optical element of the RDSLAM and to feed the subscriber-specific electric signal to a corresponding electrically conductive transmission line;

(b) convert a subscriber-specific upstream signal received from the corresponding electrically conductive transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element;

(c) operate independently of other conversion elements in the RDSLAM; and

(d) receive operating power of that conversion element through the corresponding electrically conductive transmission line;

and the passive optical element is constructed to:

(a) receive the downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements; and

(b) combine the upstream optical signals received from the conversion elements onto the at least one optical fiber.

- 5) The present invention provides a solution to a problem that arises in conjunction with the FTTC (Fiber-to-the-Curb) network topology (page 2 of the PCT-publication). In the FTTC network topology, the remote DSLAM (RDSLAM) is installed away from a central site. The RDSLAM is typically installed in a box at a street corner. Therefore, a reliable electrical power supply is more difficult and/or expensive to arrange than e.g. in conjunction with a network topology in which the DSLAM is located at the central site. The FTTC network topology provides, however, a clear advantage over the network topology in which the DSLAM is located at the central site. In the FTTC network topology, the electrically conductive transmission lines are shorter and, hence higher data transmission speeds can be achieved.
- 6) The FTTC network topology has also a clear advantage over the FTTH (Fiber-to-the-Home) network topology. In FTTC network topology, there is no need to draw optical fibers to subscriber sites as in conjunction with the FTTH network topology, i.e. the existing telephone lines can be utilized and the amount of expensive installation work of the optical fibers is reduced.
- 7) As recited in the amended independent claims, the following operations are performed (or are arranged to be performed) with a passive optical element:
 - (a) receiving of the downstream signals from the at least one optical fiber and distributing the downstream signals to the conversion elements; and
 - (b) combining the upstream optical signals received from the conversion elements onto the at least one optical fiber.
- 8) Due to the usage of the passive optical element, the above-mentioned operations do not require external power (except the power of the signal itself). Therefore, in

the technical solution as claimed the above-mentioned operations are not vulnerable to break-downs of electrical power supply.

- 9) As recited in the amended claims, the conversion elements between the passive optical element and the electrically conductive transmission lines are subscriber-specific and are powered through corresponding subscriber-specific electrically conductive transmission lines. Therefore, a conversion element specific to a certain subscriber is capable of being powered if this subscriber is able to provide electrical power through the corresponding electrically conductive transmission line irrespective whether or not other subscribers are able to provide electrical power for their respective conversion elements. For example, subscriber A may be able to transmit and receive data irrespective of subscriber B's ability to provide power.
- 10) To summarize, those operations that are common to different subscribers are performed with a passive optical element that is not dependent on electrical power supply, and those operations which are dependent on electrical power supply are performed with subscriber specific conversion elements each of which being powered via a respective subscriber-specific transmission line. Hence, the vulnerability of the FTTC network topology to break-downs of the electrical power supply is significantly reduced with the aid of the present invention.
- 11) Kimbrough deals with the FTTH network topology. Actually, in paragraph [0009] Kimbrough teaches away from using the FTTC network topology. In this paragraph Kimbrough, inter alia, mentions the need for power circuits in the FTTC network topology as a disadvantage of the FTTC network topology. Therefore, contrary to the Office' assertion, a person skilled in the art would not, in light of the disclosure of Kimbrough, integrate the HNU with the OSP in order to save the expense of fiber by using twisted pairs already in place for the connection to the premises equipment because this would lead to the FTTC network topology which Kimbrough teaches away from. Hence, the solution recited in the amended independent claims solves a problem that is mentioned,

- but not solved by Kimbrough. Instead of providing any solutions to the problem related to power transfer in the FTTC network topology, Kimbrough sees that the FTTH network topology is a solution to the problems he perceives in FTTC.
- 12) Furthermore, Kimbrough does not explicitly or implicitly teach or encourage a person skilled in the art to integrate the HNU with the OSP in order to save the expense of fiber by using twisted pairs already in place for the connection to the premises equipment; actually, as shown above kimbrough teaches away from doing so.
 - 13) Turning Kimbrough's disclosure to an FTTC based network will not only operate against the Kimbrough teachings, but would also impermissibly modify the principle of operation of the Kimbrough reference: The present invention relates to FTTC while Kimbrough relates firmly to HTTC topology. The FTTC and HTTC topologies represent two competing principles of operation in which the FTTH supports bringing cable to each home, while the FTTC technology comes to minimize the high cost of FTTH, and calls for conversion within proximity to a plurality of homes.
 - 14) Natra as well does not teach the integration of the HNU with the OSP in order to save the expense of fiber by using twisted pairs already in place for the connection to the premises equipment. Hence, even when taken in combination, neither Kimbrough nor Natra, teach all the claimed limitations.
 - 15) Furthermore, Kimbrough deals only with the FTTH network topology, except when listing disadvantages of the FTTC network topology (par. [0009]), and therefore there is no motivation for a person skilled in the art to use the teaching of Natra for modifying the solution of Kimbrough, because in the FTTH network topology there is no use for the remote powering described by Natra.
 - 16) in conclusion the disclosures of Kimbrough and Natra do not, separately or in combination, disclose all the limitations of the amended independent claims, and the cited prior art does not include any teaching, hint, or guidance that would lead

a person skilled to the art to the subject matter of the amended independent claims. Kimbrough teaches away from the present technology and thus from the claimed solution, and modifying the Kimbrough reference would impermissibly modify the principle of operation of Kimbrough. Therefore, the amended independent claims are not obvious in view of the cited art.

- 17) Applicant has made a good faith effort to address each and every point made by the Examiner, and amended the claims in order to place the application in condition for allowance. Should the Examiner find any deficiency in this amendment or in the application, or should the Examiner believe for any reason, that a conversation with applicant's agent may further the allowance and issuance of this application, the Examiner is kindly requested to contact Shalom Wertsberger at telephone (207) 799-9733.
- 18) In light of the showing and all other reasons stated above, applicant believes that the rejections and objections presented by the Examiner in the office action mailed to applicant May 28, 2008 were overcome. Applicant therefore submits that the claims as amended are in condition for allowance. Reconsideration and withdrawal of the rejection and issue of a notice of allowance on all pending claims is respectfully solicited.

Respectfully submitted

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